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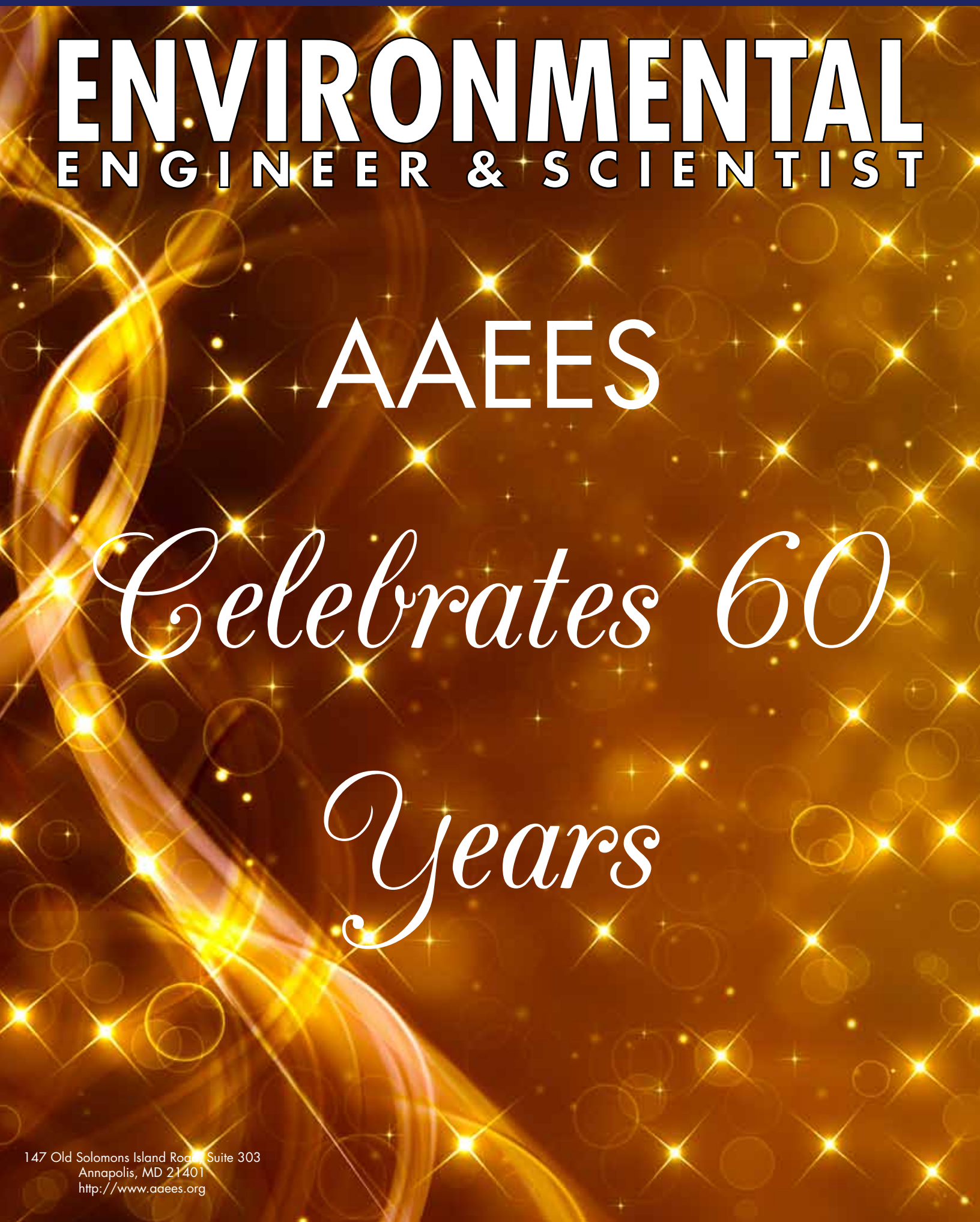

AAEES Celebrates 60 Years

147 Old Solomons Island Road, Suite 303
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http://www.aaees.org

The American Academy of Environmental Engineers and Scientists identifies highly skilled environmental engineers and environmental scientists for the benefit of the public. These unique professionals are readily recognized through Academy credentials:
Board Certified Environmental Engineer (BCEE) and Board Certified Environmental Scientist (BCES).

Those with a degree in environmental engineering (or related engineering degree), at least 8 years of experience, and a P.E. license may qualify to take written and oral specialty examinations to obtain the BCEE credential.

Those with a degree in environmental science (or related science degree) and at least 8 years of experience may qualify to take written and oral specialty examinations to obtain the BCES credential.

Federal, state, and local agencies, educational institutions, and consulting firms recognize those holding Academy credentials as trustworthy, ethical experts with a strong commitment to protecting the public health and the environment through recognition of leadership and excellence in environmental engineering and science.

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147 Old Solomons Island Road, Suite 303
Annapolis, MD 21401
410.266.3311, FAX: 410.266.7653
http://www.aaees.org

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FEATURES

DEPARTMENTS

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Address all communications on editorial, business and other matters to:

Editor-in-Chief,
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147 Old Solomons Island Road, Suite 303
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410-266-3311

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PRESIDENT'S PAGE

Howard B. LaFever, P.E., BCEE

TO BE THE BEST OF THE BEST

As I sit at my desk drafting some words of wisdom for the President's Page, I look out of the window on this mid-February day and see an awesome winter scene of blue sky, white snow, and numerous trees, including my favorite tree—the sugar maple. I want to protect that memory, but I have grave concerns about the extreme changes in the weather and ultimately with this beautiful scene being changed by the climate. Over the last two days, we have seen the temperature change from -25°F to over 50°F. These wild extreme temperature swings are making it very difficult for me to gather the sap from my sugar maples and make the 30 to 50 gallons of maple syrup I produce and mostly give away each year. This is something I have been doing for over 68 years, starting when I was two years old, and something I plan to keep doing if climate induced changes allow me to.

Based on recent reports from Cornell University and SUNY-ESF in Syracuse, our sugar maple is in a serious decline as evidenced by reduced natural regeneration and threats from numerous invasive species that are weakening this iconic tree.

The sugar maple is indicative of the myriad changes being witnessed across the globe either directly or secondarily due to climate change. In order to protect my favorite tree and keep the serene scene I am looking at alive, I am calling on "the best of the best" of environmental scientists and engineers to provide the leadership and technical excellence needed to deal with the numerous environmental issues that continue to grow and challenge us.

This is where the Academy comes into play. We offer an opportunity for bright, upcoming, and veteran environmental engineers and scientists to become "Board Certified" through review of credentials, experience, and testing.

> "All of us who are currently "Board Certified" need to reach out to others to make them aware of the Academy (a best kept secret) and encourage them to become a "Board Certified Specialist."

As a reminder, the Academy's definition of environmental engineering and environmental science is "the application of engineering or scientific principles to improve and maintain the environment for the protection of human health, for the protection of nature's beneficial ecosystems, and for environmental related enhancement of the quality of human life." This definition is a call to service of the highest order and is a call that we answer with intelligence, dedication, and joy.

All of us who are currently "Board Certified" need to reach out to others to make them aware of the Academy (a best kept secret) and encourage them to become a "Board Certified Specialist." I would like to challenge each member of the Board of Trustees to encourage five applications to be submitted either by March 31, 2016, or for next year by March 31, 2017.

I can remember early in my career as a sanitary engineer that other senior engineers in our company were Board Certified as DEEs (at that time called "Diplomate of Environmental Engineering"). I wanted to become certified after the appropriate experience and I accomplished that goal in 1982. The drive to become certified should come from within – not as a result of a directive from HR or a mandate during a performance review.

Based on my 34 years of being "Board Certified" and 14 years on the Board of Trustees/Officers, I can attest that we have "the best of the best" – people whose professionalism, dedication, experience, and education are changing our world in a million positive ways. How-

AAEES Treasurer Daniel B. Oerther and daughter, Emmalise, enjoying Howard LaFever's maple syrup.

> "The drive to become certified should come from within — not as a result of a directive from HR or a mandate during a performance review.

ever, there are many retiring scientists and engineers and we need new blood to keep this organization the "best of the best."

I would like to thank all voters for my election as President, all folks who agreed to serve this year as Committee Chairman and Committee Members, the Executive Committee for committing to bi-weekly telecons, the Board of Trustees, the Patrons and other groups that support the Academy, and finally our Academy staff – you are all wonderful!

In closing, I would like to borrow a quote from Jim Stahl's President's Page. "If you want to go fast, go alone. If you want to go far, go together." So…let's work together and have a great year and bring in more "best of the best" so that I can sleep at night knowing that the sugar maple (or your personal favorite wonder of nature that you are passionate about) will be around for future generations!!

ACADEMY NEWS

NOTICE OF BOARD OF TRUSTEES NOMINEES

Following is the Notice of Nominees for the 2017 Board of Trustees.

President-Elect

- **C. Hunter Nolen, P.E., BCEE**
  Senior Vice President/West US Group Manager
  AMEC

Vice President

- **Kristin Morico, P.E., BCEE, CSP, F.ASCE**
  Global Leader-GE Water Program
  GE Corporate Environmental Programs
- **James W. Patterson, Ph.D., BCEEM**
  Principal
  Patterson Environmental Consultants, Inc.

Trustee-at-Large

- **James Clarke, Ph.D., BCES**
  Professor, Department of CEE
  Vanderbilt University
- **David Gaddis, P.E., BCEE**
  Associate
  CDM Smith, Inc.
- **Jeffrey Greenfield, Ph.D., P.E., BCEE**
  Project Manager II
  Broward County
- **Wendy Wert, P.E., BCEE**
  Environmental Engineer
  Sanitation Districts of LA County

Full profiles of these candidates will be published in the Spring issue of *Environmental Engineer and Scientist*.

2016 EXCELLENCE IN ENVIRONMENTAL ENGINEERING AND SCIENCE AWARDS LUNCHEON AND CONFERENCE

The Academy's Awards Luncheon and Conference will be held at the National Press Club in Washington, DC on Thursday, April 14, 2016. AAEES will be presenting the winners of the 2016 Excellence in Environmental Engineering and Science Awards and the Environmental Communications Awards. AAEES will also recognize pioneers of environmental engineering and science. Go to http://www.aaees.org for more details.

EXECUTIVE DIRECTOR'S PAGE

Burk Kalweit

THE ACADEMY ROLLS OUT THE PATRONS PROGRAM

For those of you who were fortunate enough to be with us at the Academy's summit on Building a Sustainable Wet Infrastructure for Southern California, we hope you enjoyed the program and also appreciated the unique nature of the session. Our slate of speakers was comprised of a veritable Who's Who of the Southern California public sector agencies. The people providing information and perspective were drawn from the very top of the management structure of these agencies.

The Academy's ability to secure these speakers reflects the esteem in which our speakers hold the Academy. Many of the speakers are already board-certified members of the Academy. Those who are not, are working with the Academy and preparing to take steps to become board certified themselves.

The Summit was a resounding success. There were over 150 attendees that included a mix of students, agency staff, industry suppliers, and environmental engineering and science consultants. Against the backdrop of critical water issues being raised by the ongoing drought in California, the session and its content could not have been more well-designed or well-timed. Perhaps the most interesting revelation/observation from the summit was the emerging story that while there is much work to be done to accommodate the drought, there is a recognition within the water community that no one has all the answers. In fact, it is the accepted wisdom that only by combining interests and sharing knowledge will the community, as a whole, be able to address and resolve the issues at hand.

All that serves as a preamble for a discussion about the background story at the Summit. Those of you who were there, hopefully, noticed the signboards that were posted on the stage and at various other locations. The signboards referred to Patrons of the American Academy of Environmental Engineers and Scientists. On the signboards there were an array of company logos -- presumably logos of the organizations that were Academy Patrons. There were twelve in all, with an even distribution of environmental consulting companies and public sector agencies. What was not there was an explanation of exactly what a Patron is and where they came from. Nor was there an indication of why these organizations had chosen to become Patrons and what it took for them to reach that status.

Filling in that gap was a task assigned to Jim Stahl, our master of ceremonies for the summit. Owing to the limited amount of time available on the agenda, Jim was not really able to do more than give a brief overview of what he termed a new partnership between:

- the Academy and its members,
- the organizations where they received their education, and
- the organizations where they work after earning their degree.

Put more plainly, the Academy's Patrons are colleges and universities with an environmental program, public sector agencies that hire environmental engineers and scientists, corporations involved in environmental issues, and lastly, environmental consulting firms that have a broad customer base spanning both public sector and private sector interests.

Clearly, there's a lot going on here. We might term the entities listed as members of the environmental ecosystem, one in which there is symbiosis and multiple opportunities to improve efficiencies by applying resources for maximum impact. In this depiction, one can portray the Academy as being one of the focal points of the larger system. By this, we mean that the Academy works with the organizational interests to promote the development of the resources (in the case of the Academy, the people resources) that industry, the public sector, academia, and consulting firms require to succeed.

Putting this into context: the Academy is a collection of individuals who have gone through the Academy's rigorous processes to verify their expertise in a given environmental engineering or scientific field. They identify themselves as the best of the best in their chosen field and stand with their colleagues who have challenged themselves by also going through the selection and verification process.

Rather than being a membership organization along the lines of organizations such as AWWA, ASCE, AIChE, and APWA, the Academy is a credentialing body that provides verification services for any qualified individual wishing to earn and maintain one of the certifications that the Academy underwrites. However, since we are chartered as an organization comprised solely of individual members, we have never had the ability to create a category for organizational memberships. That's not what the Academy's charter calls for, nor is organizational membership enabled in the Academy's bylaws.

Historically, this has left the Academy in a self-imposed position of relative weakness. It's common knowledge that most membership type organizations gain significant funding from their corporate members and partners. We all appreciate how useful it is to have friends with deep pockets. This is not to say that the Academy does not have support from the types of organizations that are mentioned above. It does, and it intends to continue to do so. However, much

"The Academy is a credentialing body that provides verification services for any qualified individual wishing to earn and maintain one of the certifications that the Academy underwrites.

of the organizational sponsorship that the Academy currently receives is tightly connected to an activity, a publication, an award, etc. There is no checkbox on a form that enables a sponsor to sign up for the entire Academy program. Until now. The creation of the Patrons program enables organizational supporters of the Academy to become a Patron, a category of support that is structured to serve as a general sponsorship for all Academy programs.

What kind of Patrons do we have? We have representatives from the three legs of the environmental stool -- public agencies, consulting and engineering firms, and the academic sector. The Patrons package contains PR/recognition items for them -- items that communicate their Patrons status to their colleagues. We will be using all forms of traditional and new media to position our Patrons as being among the leaders in their sector. The Academy will use its extensive outreach capabilities and work through its sponsoring organizations to ensure that those audiences will come to know our Patrons and see the value being generated by the Academy/Patrons partnership.

Being a Patron also has a positive business aspect. Our intent is to make sure that becoming a Patron is a good business proposition for any candidate organization. What this means is that the Academy is offering a structure of discounts for the programs and activities that are part of our annual program. We want to make it as simple and painless as possible for the people who work for the Patrons to take advantage of all that the Academy offers. Where possible, we also want to remove barriers to people who are working to become board-certified Academy members. Our Patrons' sponsorship will enable us to reduce or eliminate the fees that we have charged in the past.

Making these changes is the easy part. There is a more important piece of this relationship that is harder to quantify. This deals with the Academy closing the loops and tying the knots that lead to successful partnering engagements. It is the unique value proposition the Academy owns that enables it to create the Patrons program. At the very core, the Academy's board certification programs are all about ensuring that individuals working in the environmental arena have the highest possible level of expertise and competence. It means that the Academy does many things that are an adjunct to the core activities of certification, but ones that are not structured as part of our ongoing programs. These are things like our K-12 program, our student chapters activities, our outreach to the general public, etc. where we are engaged, but don't have the resources to structure the kind of program that we know will be more successful.

That's where the Patrons program comes into play. I suspect you've all heard of the concept of enlightened self-interest; well that is what the Patrons program offers the organizations that have joined us as Patrons. Whether they are public agencies or engineering design firms, at the very core the operating capability of these organizations is a function of the people they can attract and put to work on the critical issues that their customers and stakeholders bring to them. The Academy has always served as a reservoir of extremely talented people who want to make sure that the skills required to work and serve in the environmental arena are available and can be verified for quality and competence through the certification process.

However, maintaining that available reservoir of talent and capability is a task that the Academy has taken on more or less by itself. The Patrons program changes that. The Academy recognizes that there is a continuum of knowledge that is created and lost every year. Our overall mission is to ensure that, at a minimum, the reservoir is maintained. Ideally, the activities of the Academy and its members will be enough to guarantee that there is some growth in the number of highly qualified individuals over the years. But that has proven to be a problematic situation since the Academy is resource constrained. That is the reason for the creation of Patrons program, and also the reason that I cite enlightened self-interest as a reason for organizations to become Patrons.

What the Academy seeks to do is create a program that informs the general public of the importance of environmental engineering and science to their health and well-being. The intent of this campaign is to attract individuals to a career in this field. One way of doing that, one in which we are actively working on to improve, is creating programs that we can broadcast with the intent of generating student interest. Student interest here is defined as anything from the very earliest stages of STEM education on through the postdoc-

toral research work that is being done at our colleges and universities. Our objective is to get as many people as possible interested in the environmental area, with the expectation that they too will see that environmental issues are not only a great career, but they also offer the individual a chance to have a very real impact in their own neighborhood or across the globe.

That is where the enlightened self-interest comes into play. Clearly, consulting firms want to get the best and brightest engineering and science graduates working for them. Public agencies are in a similar situation. They also want the best and brightest, but find themselves competing against industry for the services of what appears to be a cadre of graduates that is not growing as fast as employers' demand for them. Academia finds itself in the same situation. It has the advantage of being able to see students with extraordinary talent early on in the game. However, they also find themselves constrained in trying to compete with agencies and engineering firms for the services of those people. So how do these organizations assure themselves that the people and talent they need is available now and in the future? The simple answer is by working with the Academy and the Patrons program to create and support the programs that keep the pipeline of interested individuals full.

It's not too hard to see where this is leading. The Patrons program generates the support the Academy needs to be able to look at the long-term issues as well as the near-term approaches for dealing with those long-term issues. Being a Patron is all about planting seeds. The Academy's function in this is to serve as the entity that takes those seeds, and by planting and nurturing them, will create a harvest that is bountiful and repeatable from year to year.

This has taken a lot longer than I thought it would and I apologize for the length of this letter. I hope you are as intrigued by the Patrons program as we are. We very much look forward to working with the organizations our members work for in bolstering the number of Patrons that we have. We also look forward to working with you as representatives of your employers to help us define, structure, and launch the programs we see as necessary to ensure the long-term vitality of the environmental industry and the health and well-being of the communities we work and live in.

MEMBER NEWS

AWARDS AND RECOGNITION

Rudoloph Bonaparte, Ph.D., P.E., BCEE, D.GE, F.ASCE, NAE, is one of the 2016 recipients of the Outstanding Projects and Leaders (OPAL) Award. He is being honored for design. ASCE's OPAL Award was established in 1999 to recognize and honor oustanding civil engineering leaders. Dr. Bonaparte is President and CEO of Geosyntec Consultants and has been a Board Certified Environmental Engineer in General Environmental Engineering since 2008.

Earnest F. Gloyna, Ph.D., was a 2015 candidate for the Water Environment Federation (WEF) Fellows Recognition Program. The WEF Fellows program recognizes distinguished accomplishments and contributions of individuals who have made an effect in the global water environment in a variety of disciplines. Dr. Gloyna was an Emeritus Member and had been a Board Certified Environmental Engineer in Sanitary Engineering since 1958.

Gene Koontz, P.E., BCEE, was featured in the September 2015 issue of *Municipal Water Leader* and was named AWWA President in June 2015. In the article, he discussed the aging water and wastewater infrastructure of the U.S., associated funding challenges, and how AWWA is preparing professionals to meet future water and wastewater needs. Mr. Koontz is Senior Vice President of Gannett Fleming Architects, Inc. He has been a Board Certified Environmental Engineer in Water Supply and Wastewater Engineering since 2012.

ON THE MOVE

Richard J. Pope, P.E., BCEE, was appointed as Vice President of Hazen and Sawyer. Mr. Pope has been a Board Certified Environmental Engineer in Water Supply and Wastewater Engineering since 2002.

SPECIALTY CERTIFICATION

Charles J. Robinson, P.E., BCEE, has been reinstated. He was originally certified as a Board Certified Environmental Engineer in Water Supply and Wastewater in 1988.

IN MEMORIAM

Charles P. Steiner, Jr., P.E., J.D., BCEE, passed away on September 15, 2015. He received his B.S. in Chemical Engineering from Lehigh University in 1972 and his J.D. from the Dickinson School of Law in 1978. He had over 25 years of experience in air permit application preparation, facility emission inventory preparation, development of air permitting strategy, compliance development, pollution control technology evaluation, regulatory agency negotiation, and regulatory compliance auditing. Most recently, he was Senior Project Engineer with Weston Solutions, Inc.

Mr. Steiner had been a Board Certified Enviornmental Engineer in Air Pollution Control since 1995. In addition to AAEES, he was also a member of AIChE and A&WMA.

The Class of 2015

Compiled by J. Sammi Olmo

From the first applicants in 1956 to the Board Certified Environmental Engineers (BCEE), Board Certified Environmental Engineering Members (BCEEM), and Board Certified Environmental Scientists (BCES) listed on the following pages, the Academy has undergone growth and change, but has never wavered from it's core objective to "identify and credential persons with special capabilities in environmental engineering and environmental science."

The Class of 2015 are comprised of highly-qualified environmental engineers and environmental scientists from a wide range of backgrounds including professors, supervising engineers, division managers, civil engineers, environmental quality compliance coordinators, project scientists, principal environmental engineers, and geochemists.

Minimum qualifications for Board Certification include requisite degree and 8 years' experience (4 years in responsible charge).

- Board Certified Environmental Engineer (BCEE): environmental engineering or related engineering degree plus P.E. license.
- Board Certified Environmental Scientist (BCES): environmental science or related science degree.
- Board Certified Environmental Engineering Member (BCEEM): environmental engineering or related engineering degree plus 20 years' experience (no P.E. required). BCEEMs are cetified through Eminence only.

Applicants with fewer than 16 years experience sit for a written examination and a peer review in their selected specialty area. Those with 16 or more years of experience may request a waiver of the written examination. A Master's and Ph.D. each count as 1.5 years toward the years-of-experience requirements.

For detailed requirements for specialty certification, go to http://www.aaees.org.

The areas of specialty certification for Board Certification are:

ENVIRONMENTAL ENGINEERING

AP	Air Pollution Control
ES	Environmental Sustainability
GE	General Environmental Engineering
HW	Hazardous Waste Management and Site Remediation
IH	Industrial Hygiene Engineering
RP	Radiation Protection Engineering
SW	Solid Waste Management
WW	Water Supply/Wastewater Engineering

ENVIRONMENTAL SCIENTISTS

AR	Air Resources
EB	Environmental Biology
EC	Environmental Chemistry
EM	Environmental Microbiology
ET	Environmental Toxicology
GW	Groundwater and the Subsurface Environment
HM	Hazardous Waste Management and Site Remediation
SM	Solid Waste Management
SR	Surface Water Resources
SS	Sustainability Science

LEGEND

- ■ Board Certified Environmental Engineer
- ♦ Board Certified Environmental Engineering Member
- ● Board Certified Environmental Scientist

The Class

Mark D. Abkowitz, Ph.D., BCEEM — ES

Professor
Vanderbilt University
Jacobs Hall, Room 292
400 24th Avenue South
Nashville, TN 37235

Dr. Abkowitz received his B.S. and M.S. degrees in Civil Engineering and Ph.D. degree in Transportation from the Massachusetts Institute of Technology. He has more than 40 years experience.

Douglas E. Adams, Ph.D., BCEEM — ES

Daniel F. Flowers Professor
Vanderbilt University
Civil and Environmental Engineering
PMB 351831, 400 24th Avenue S.
Nashville, TN 37235

Dr. Adams received his B.S. and Ph.D. degrees in Mechanical Engineering from the University of Cincinnati and M.S. in Mechanical Engineering from the Massachusetts Institute of Technology. He has more than 20 years experience.

Paul T. Anastas, Ph.D., BCES — SS

Teresa and H. John Heinz III Professor
Yale University
195 Prospect Street
New Haven, CT 06520

Dr. Anastas received his B.S. in Chemistry from the University of Massachusetts and Ph.D. in Chemistry from Brandeis University. He has more than 30 years experience.

Mohammad Badruzzaman, Ph.D., P.E., BCEE — WW

Supervising Engineer
MWH Global
300 North Lake Avenue #400
Pasadena, CA 91101

Dr. Badruzzaman received his B.S. in Civil Engineering from Bangladesh University of Engineering and Technology and M.S. and Ph.D. degrees in Environmental Engineering from Arizona State University. He is a licensed P.E. in California and has more than 18 years experience.

Gino Bianchi-Mosquera, D.Env, BCES — GW

Principal Geochemist
GSI Environmental Inc.
4590 MacArthur Boulevard #285
Newport Beach, CA 92660

Dr. Bianchi-Mosquera received his BA degree in Geochemistry from Occidental College, M.S. in Geochemistry/Mineralogy from The Pennsylvania State University and D.Env in Environmental Science & Engineering from the University of California. He has more than 33 years experience.

Edward J. Bouwer, Ph.D., BCEEM — WW

Abel Wolman Professor of Environmental Engineering
Johns Hopkins University
3400 North Charles Street
Baltimore, MD 21218

Dr. Bouwer received his BSCE in Civil Engineering from Arizona State University and M.S. and Ph.D. degrees in Environmental Engineering and Science from Stanford University. He has more than 38 years experience.

Michele Braas, P.E., BCEE — WW

Water Reuse Market Leader
RETTEW Associates, Inc.
3020 Columbia Avenue
Lancaster, PA 17603

Ms. Braas received her BS degree in Civil/Environmental Engineering from The Pennsylvania State University. She is a licensed P.E. in Pennsylvania and has more than 21 years experience.

Kevin G. Brown, Ph.D., BCEEM — HW

Research Associate Professor
Vanderbilt University
2301 Vanderbilt Place
PMB 351826
Nashville, TN 37235-1826

Dr. Brown received his BE in Chemical Engineering, MS in Environmental/Water Resources Engineering and Ph.D. in Environmental Engineering from Vanderbilt University. He has more than 30 years experience.

# of 2015

Mark T. Brown, Ph.D., BCES — SS

Professor
University of Florida
Phelps Lab
PO Box 116350
Gainesville, FL 32611

Dr. Brown received his BA and MS degrees in Architecture and Ph.D. in Ecology/Environmental Engineering Sciences from the University of Florida. He has more than 25 years experience.

Jennifer L. Clancy, Ph.D., BCES — EM

Chief Scientist
Corona Environmental Consulting, LLC
6 Old Country Way
Scituate, MA 02066

Dr. Clancy received her BS in Microbiology from Cornell University, MS in Microbiology/Biochemistry from the University of Vermont, Ph.D. in Microbiology/Immunology from McGill University, Canada and MS in Environmental Law from the Vermont Law School. She has more than 40 years experience.

Victoria O. Conway, P.E., BCEE — WW

Departmental Engineer
Sanitation Districts of LA County
1955 Workman Mill Road
Whittier, CA 90601

Ms. Conway received her BS in Mechanical from the California State University-Northridge and MS in Mechanical from California Polytechnic State University. She is a licensed P.E. in the California and has more than 32 years experience.

Tanya H. Davis, P.E., BCEE — WW

Tribal Utility Consultant
Indian Health Service
122 East Seneca Street
Manlius, NY 13104

Ms. Davis received her BS in Environmental Engineering from New Mexico Institute of Mining and Technology and MS in Environmental and Water Resources Engineering from the University of Texas-Austin. She is a licensed P.E. in Arizona and has more than 17 years experience.

Christopher H. Day, BCES — ET

Principal Environmental Scientist
ARCADIS
2929 Briarpark Drive #300
Houston, TX 77042

Mr. Day received his BA in Biology from Earlham College and MS in Fisheries Management from Louisiana State University. He has more than 31 years experience.

Joseph J. Delfino, Ph.D., BCES — EC

Professor Emeritus, Environmental Engineering Sciences
University of Florida
Department of Environmental Engineering Sciences
AP Black Hall Box 116450
Gainesville, FL 32611-6450

Dr. Delfino received his BS in Chemistry/Philosophy from the College of Holy Cross, MS in Chemistry from the University of Idaho and Ph.D. in Civil/Environmental Engineering from the University of Wisconsin. He has more than 50 years experience.

Luis A. Durruty, P.E., BCEE — WW

Environmental Engineering Associate
City of Los Angeles
2714 Media Center Drive
Mail Stop 911
Los Angeles, CA 90065

Mr. Durruty received his BS in Liberal Arts/Education from the Excelsior College and MS in Civil Engineering from Loyola Marymount University. He is a licensed P.E. in California and has more than 10 years experience.

Lorne G. Everett, Ph.D., BCES — GW

President/CEO
L. Everett & Associates, LLC
3700 State Street #350
Santa Barbara, CA 93105

Dr. Everett received his BSc in Biology from Lakehead University and MS in Limnology and Ph.D. in Hydrology from the University of Arizona. He has more than 50 years experience.

The Class

☐ Arthur H. Fagerstrom, P.E., BCEE — WW

Veolia
119 Shippen Road
Erdenheim, PA 19038

Mr. Fagerstrom received his B.S. in Civil Engineering and M.S. in Environmental Engineering from Drexel University. He is a licensed P.E. in Pennsylvania has more than 35 years experience.

☐ Linda A. Figueroa, Ph.D., P.E., BCEE — WW

Associate Professor
Colorado School of Mines
1500 Illinois Street
Golden, CO 80401

Dr. Figueroa received her BS in Civil Engineering from the University of Southern California and Ph.D. in Civil Engineering from the University of Colorado at Boulder. She is a licensed P.E. in California and has more than 48 years experience.

○ Gregory M. Firely, BCES — GW

Senior Project Scientist
Langan Engineering and Environmental Services
2700 Kelly Road #200
Warrington, PA 18976

Mr. Firely received his B.S. in Environmental Science and Policy from the Drexel University. He has more than 16 years experience.

○ Cynthia L. Garcia, BCES — EC

Environmental Quality Compliance Coordinator
City of Peoria
8401 West Monroe Street
Peoria, AZ 85345

Ms. Garcia received her B.S. degree in Biology from Northeast Missouri State University. She has more than 22 years experience.

☐ Monica Gasca, P.E., BCEE — WW

Civil Engineer
Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, CA 90601

Ms. Gasca received her B.S. in Civil Engineering from California State Polytechnic University and M.S. in Environmental Engineering from the University of California-Berkeley. She has more than 12 years experience.

☐ Fernando F. Gonzalez, P.E., BCEE — WW

Assistant Division Manager
City of Los Angeles
Bureau of Sanitation
2714 Media Center Drive
Los Angeles, CA 90065

Mr. Gonzalez received his BS in Civil Engineering from the Universidad Nacional de Ingenieria, Peru, BE in Civil Engineering from City College of New York and MBA in Technology Administration from the University of Phoenix. He is a licensed P.E. in California and has more than 27 years experience.

☐ Eric S. Hansen, P.E., BCEE — WW

Principal Civil Engineer
Silicon Valley Clean Water
1400 Radio Road
Redwood City, CA 94065-1220

Mr. Hansen received his B.S. degree in Chemistry from College of L&S, University of California-Davis and M.S. in Materials Science/Engineering from Stanford University. He is a licensed P.E. in California and has more than 22 years experience.

○ Steven M. Harrison, BCES — SR

Manager, Technical Programs
Water Environment Federation
610 Wythe Street
Alexandria, VA 22314

Mr. Harrison received his BS Natural Resource Management from the University of Maryland-College Park. He has more than 25 years experience.

# of 2015

Thomas P. Hasek, Jr., BCEEM — SW

EE & Compliance Manager
Seneca Meadows
1786 Salcman Road
Waterloo, NY 13165

Mr. Hasek received his B.S. degree in Civil Engineering from the Rochester Institute of Technology and M.S. in Environmental Studies from the University of Rochester. He has more than 38 years experience.

Brian W. Hickey, P.E., BCEE — WW

Principal
CDM Smith
75 State Street #701
Boston, MA 02109

Mr. Hickey received his B.S. degree in Civil Engineering from Northeastern University and M.S. in Organizational Leadership from Southern New Hampshire University. He is a licensed P.E. in New Hampshire, Massachusetts and three other states with more than 25 years experience.

Kevin L. Hickey, P.E., BCEE — WW

Project Engineer
CHA Consulting, Inc.
111 Winners Circle
Albany, NY 12205

Mr. Hickey received his B.S. in Civil Engineering and M.S. in Environmental Engineering from Clarkson University. He is a licensed P.E. in New York and has more than 8 years experience.

Christopher S. Hodges, P.E., BCEE — AP

Environmental Engineer IV
MDEQ
515 East Amite Street
Jackson, MS 39201

Mr. Hodges received his BS in Chemical Engineering from Mississippi State University. He is a licensed P.E. in Mississippi and has more than 18 years experience.

Robert H. Huckaby, P.E., BCEE — HW

Environmental Engineer II
MDEQ
515 East Amite Street
Jackson, MS 39201

Mr. Huckaby received his B.S. degree in Engineering from Mississippi State University. He is a licensed in Mississippi and has more than 21 years experience.

William A. Jackson, Ph.D., P.E., BCEE — WW

Professor
Texas Tech University
911 Boston
Lubbock, TX 79409

Dr. Jackson received his BS degree in Biology from Rhodes College and MS and Ph.D. degrees in Engineering Science from Louisiana State University. He is a licensed P.E. in Louisiana and has more than 26 years experience.

Sarath C. K. Jagupilla, Ph.D., P.E., BCEE — WW

Lecturer
Stevens Institute of Technology
CEOE Department
Rocco Building
Hoboken, NJ 07030

Dr. Jagupilla received his BE in Civil Engineering from Hindustan College of Engineering, India, ME in Irrigation Water Management from Anna University, India and Ph.D. in environmental Engineering from Stevens University. He is a licensed P.E. in New Hampshire and has more than 8 years experience.

Kayra N. Johnson, P.E., BCEE — AP

Environmental Engineer IV
MDEQ
515 East Amite Street
Jackson, MS 39201

Ms. Johnson received a B.S. in Civil Engineering and M.S. in Environmental Engineering from the University of Mississippi. She is a licensed P.E. in Mississippi with more than 17 years experience.

The Class

Philip A. Jones, P.E., BCEE — WW

Vice President
Preble-Rish, Inc.
324 Marina Drive
Port St. Joe, FL 32456

Mr. Jones received his B.S. in Civil Engineering and M.S. in Environmental Engineering Auburn University. He is a licensed P.E. in Georgia and Florida and has more than 21 years experience.

Ana M. Karamalegos, P.E., BCEE — WW

Environmental Engineer
CDM Smith
12357-A Riata Trace Parkway #210
Austin, TX 78727

Ms. Karamalegos received her BE in Chemical Engineering from Vanderbilt University and MS in Environmental/Water Resources Engineering from the University of Texas-Austin. She is a licensed P.E. in Texas and has more than 9 years experience.

Laura W. Lackey, Ph.D., P.E., BCEE — AP

Senior Associate Dean/Professor of Environmental Engineering
Mercer University
School of Engineering
1501 University Drive
Macon, GA 31207

Dr. Lackey received her B.S., M.S. and Ph.D. degrees in Chemical Engineering from the University of Tennessee-Knoxville. She is a licensed P.E. in Alabama and has more than 28 years experience.

Michael R. Lenkiewicz, P.E., BCEE — SW

Project Manager
Delaware Solid Waste Authority
1128 South Bradford Street, PO Box 455
Dover, DE 19903-0455

Mr. Lenkiewicz received his BCE in Chemical Engineering from the University of Delaware. He is a licensed P.E. in Delaware and has more than 8 years experience.

Karl G. Linden, Ph.D., BCEEM — WW

Helen & Huber Croft Endowed Full Professor
University of Colorado-Boulder
1111 Engineering Drive, UCB 428
Boulder, CO 80309

Dr. Linden received his M.S. and Ph.D. degrees in Civil/Environmental Engineering from the University of California-Davis. He has more than 22 years experience.

Tamzen W. Macbeth, Ph.D., P.E., BCEE — HW

Principal Environmental Engineer
CDM Smith
50 West 14th Street #200
Helena, MT 59601

Dr. Macbeth received her B.S. in Microbiology and M.S. in Environmental Engineering from Idaho State University and Ph.D. in Civil/Environmental Engineering from the University of Idaho. She is a licensed P.E. in Idaho and has more than 15 years experience.

Jim Marchese, BCES — SR

Assistant Division Manager
City of Los Angeles Public Works
1149 South Broadway Street
Los Angeles, CA 90015

Mr. Marchese received his BA in Environmental Studies from the University of California-Santa Barbara. He has more than 24 years experience.

Trent M. Montemayor, P.E., BCEE — WW

Civil Sanitary Engineer
Greeley and Hansen
7820 Innovation Boulevard #150
Indianapolis, IN 46278

Mr. Montemayor received his B.S. in Civil Engineering from the University of Michigan. He is a licensed P.E. in Michigan and Indiana with more than 8 years experience.

# of 2015

☐ Audra N. Morse, Ph.D., P.E., BCEE — WW

Professor
Texas Tech University
CEE Department TTU
Box 41023
Lubbock, TX 79409-1023

Dr. Morse received her B.S. and M.S. degrees in Environmental Engineering and Ph.D. in Civil Engineering from Texas Tech University. She is a licensed P.E. in Texas with more than 16 years experience.

☐ Kenneth Nowakowski, P.E., BCEE — WW

Senior Project Manager
Hurt & Profitt, Inc.
2524 Langhorne Road
Lynchburg, VA 24501

Mr. Nowakowski received his B.S. in Mechanical Engineering and ME in Civil/Environmental Engineering from Old Dominion University. He is a licensed P.E. in Virginia with more than 29 years experience.

☐ Laura Jo Oakes, P.E., BCEE — SW

Project Engineer
EA Engineering, Science, and Technology, Inc.
225 Schilling Circle #400
Hunt Valley, MD 21031

Ms. Oakes received her B.S. degree in Civil Engineering/Environmental Science and M.S. in Civil Engineering from Clarkson University. She is a licensed P.E. in Maryland with more than 10 years experience.

☐ Thomas P. O'Connor, P.E., BCEE — WW

Principal Investigator
US EPA
Urban Watershed Management Branch
2890 Woodbridge Avenue
Edison, NJ 08837

Mr. O'Connor received his B.S. in Physics and M.S. in Environmental Engineering from Manhattan College. He is a licensed P.E. in New York and New Jersey with more than 24 years experience.

○ Ochan Otim, Ph.D., BCES — EC

Supervisor
City of Los Angeles
12000 Vista Del Mar
Playa Del Rey, CA 90293

Dr. Otim received his MSc in Analytical Chemistry from the University of Regina, Canada and Ph.D. degree in Analytical Biochemistry from Wichita State University. He has more than 15 years experience.

☐ Thomas M. Reilly, P.E., BCEE — SW

Senior Project Manager
Atkins North America
3901 Calverton Boulevard, 4th Floor
Calverton, MD 20705

Mr. Reilly received his B.S. degree in Biology/Chemistry from Mount Saint Mary's University and M.S. in Applied Biomedical Engineering from Johns Hopkins University. He is a licensed P.E. in Maryland with more than 19 years experience.

☐ William D. Roberts, P.E., BCEE — WW

Project Manager
GHD Inc.
4747 North 22nd Street #200
Phoenix, AZ 85016

Mr. Roberts received his BS in Civil Engineering from the Pennsylvania State University. He is a licensed P.E. in Arizona with more than 15 years experience.

☐ James C. Roby, P.E., BCEE — WW

Project Manager – Water/Wastewater
Civil & Environmental Consultants, Inc.
250 Old Wilson Bridge Road #250
Worthington, OH 43085

Mr. Roby received his B.S. in Environmental Engineering from Murray State University and M.S. in Environmental Engineering from the University of Tennessee. He is a licensed P.E. in Ohio and North Carolina with more than 8 years experience.

The Class

☐ Damon K. Roth, P.E., BCEE — WW

Project Manager
Environmental Engineering & Technology
109 North Washington Street
Ritzville, WA 99169

Mr. Roth received his B.S. and M.S. degrees in Civil/Environmental Engineering from the University of Washington. He is a licensed P.E. in Washington with more than 11 years experience.

☐ John C. Sanders, P.E., BCEE — SW

Environmental Engineer Administrator
MDEQ
PO Box 2261
Jackson, MS 39225

Mr. Sanders received his B.S. degree in Engineering from Mississippi State University. He is a licensed P.E. in Mississippi with more than 18 years experience.

☐ Michael Scullion P.E., BCEE — WW

Project Manager
CDM Smith
2301 Maitland Center Parkway #300
Maitland, FL 32751

Mr. Scullion received his BS and MS degrees in Civil/Environmental Engineering from The Ohio State University. He is a licensed P.E. in Florida with more than 9 years experience.

☐ Veysel F. Sever, Ph.D., P.E., BCEE — WW

Project Manager
American Structurepoint
2550 Corporate Exchange Drive #300
Columbus, OH 43231

Dr. Sever received his B.S. in Civil Engineering from Yildiz Technical University, M.S. in Civil/Hydraulic Engineering from Osmangazi University and Ph.D. in Environmental Engineering from Tulane University. He is a licensed P.E. in Florida, Ohio and three others states with more than 14 years experience.

☐ Andrew R. Shaw, P.E., BCEE — WW

Associate Vice President
Black & Veatch Corporation
8400 Ward Parkway
Kansas City, MO 64114

Mr. Shaw received his B.Eng degree in Chemical Engineering from Loughborough University of Technology, United Kingdom and Ph.D. in Environmental Engineering from the Illinois Institute of Technology. He is a licensed P.E. in Kansas with more than 25 years experience.

○ David Singleton, BCES — EC

Environmental Administrator
MDEQ
1542 Old Whitfield Road
Pearl, MS 39208

Mr. Singleton received his B.S. degree in Chemistry from Mississippi College. He has more than 25 years experience.

◇ Jeffrey B. Slapper, BCEEM — WW

Principal Project Manager
MWH
1560 Broadway #1800
Denver, CO 80202

Mr. Slapper received his BS degree in Civil/Environmental Engineering from the University of Missouri. He has more than 35 years experience.

○ Tamara L. Sorell, Ph.D., BCES — ET

Chief Scientist/Practice Leader
Brown and Caldwell
One Tech Drive #310
Andover, MA 01810

Dr. Sorell received her AB in Biochemical Sciences from Princeton University and Ph.D. in Pharmacology from the Columbia University. She has more than 35 years experience.

# of 2015

James R. Stout, BCES — SM

Principal
Geosyntec Consultants
11490 Westheimer Road #150
Houston, TX 77077

Mr. Stout received his B.S. in Biology and M.S. in Environmental Science from the University of Cincinnati. He has more than 38 years experience.

Patrick S. Sullivan, BCES — SM

Senior Vice President
SCS Engineers
3117 Fite Circle #108
Sacramento, CA 95827

Mr. Sullivan received his B.S. in Biology from Harvard University. He has more than 26 years experience.

Derek W. Tomlinson, P.E., BCEE — HW

Senior Engineer
Geosyntec Consultants
1787 Sentry Parkway West
Building 18 #120
Blue Bell, PA 19422

Mr. Tomlinson received his B.S. and M.S. degrees in Civil Engineering from the University of Waterloo. He is a licensed P.E. in Pennsylvania with more than 21 years experience.

Rocky C. Welborn, P.E., BCEE — WW

Senior Associate Engineer
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Mr. Welborn received his B.S. in Civil Engineering and M.S. in Engineering Management from the California Polytechnic University-Pomona. He is a licensed P.E. in California with more than 11 years experience.

Jay D. White, DEng, BCES — GW

Remediation Group Manager
AECOM
1000 Corporate Centre Drive #250
Franklin, TN 37067-6209

Dr. White received his B.S. in General Studies from Louisiana State University and M.S. and Deng degrees in Environmental Science/Engineering from the University of California-Los Angeles. He has more than 40 years experience.

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MEMBER SAVVY

The Value of AAEES Membership to you

The American Academy of Environmental Engineers and Scientists (AAEES) Board certifies environmental engineers and scientists for the benefit of the profession and the public. AAEES's annual Excellence in Environmental Engineering and Science Awards recognize and promote advanced, efficient, and sustainable solutions to environmental challenges. Accredited by the Council of Engineering & Scientific Specialty Boards, AAEES also collaborates on PE licensure and university program accreditation. AAEES offers professional continuing education, student membership and chapters, K-12 education, individual achievement awards, and professional and public resources through the *Environmental Engineering and Science Resource Guidebook*.

Your membership provides you benefits including access to technical information, networking, and career opportunities. In particular, listed below are nine benefits of Academy membership. Are you making the most of them?

1. RECOGNITION

Certification in an environmental specialty field is acknowledged when you proudly display the BCEE or BCES title

2. PUBLICATIONS

The Environmental Engineer and Scientist; *Who's Who in Environmental Engineering and Science*; *Environmental Engineering and Science Resource Guidebook*; and *Environmental Engineering Body of Knowledge*

3. NETWORKING

AAEES Website (http://www.aaees.org); Social Media connections; Student Chapters and Tau Chi Alpha

4. AWARDS

Excellence in Environmental Engineering and Science Competition; Environmental Communication Awards; and AAEES Individual Awards

5. MENTORING

AAEES Mentoring Program provides an opportunity to mentor other professionals

6. SEMINARS/WORKSHOPS

Local, regional, and national seminars and workshops; Speaking opportunities

7. HAPPE LECTURE SERIES

A program that brings professional expertise to universities

8. COMMITTEES

Opportunities abound for volunteer work that benefits the Academy and you

9. ACCREDITATION

AAEES is a lead society in the Accreditation Board for Engineering and Technology (ABET)

THE KAPPE LECTURE SERIES

"A man's debt to his profession is to help those that follow."

The Kappe Lecture Series was inaugurated by the Academy in 1989 to share the knowledge of today's practitioners with tomorrow's environmental engineers and scientists. It is an annually recurring series of lectures presented on college campuses during the Fall academic term. This focus enables it to complement the lecture series sponsored by the Association of Environmental Engineering & Science Professors, which brings renowned research engineers to universities in the Spring term.

The Academy's Awards Committee chooses lecturers from the practicing engineering community in the year preceding presentation of the lectures. An abstract of the lectures offered and a biographical profile of the lecturer is circulated to universities teaching environmental engineering together with an invitation to host the Kappe Lecturer. From among those universities expressing interest, the Awards Committee typically selects up to ten host universities. Host university responsibilities include payment of a nominal fee and publicizing the lecture to ensure widespread exposure of the lecturer to the academic and surrounding professional community.

This program was inspired by a grant from the estate of Stanley E. Kappe, P.E., DEE, a successful environmental engineer, believed he owed a debt to the profession that rewarded him so well. During his life, he gave of himself to his university and to his profession through countless hours of volunteer activity. And, through this Lecture Series, he continues to share his good fortune with tomorrow's environmental engineers and scientists.

He graduated from Pennsylvania State University in 1930 with a bachelor's degree in sanitary engineering. He served with the Pennsylvania State Health Department and the U.S. Army Corps of Engineers before joining the Chicago Pump Company as its Eastern Regional Manager in 1935. In 1945, he founded Kappe Associates, Inc., a water supply and wastewater equipment company headquartered in Rockville, Maryland, and continued as its Chief Executive Officer until his death in 1986.

His peers recognized his contributions to the profession by numerous awards, including the AWWA Fuller Award, the WEF Arthur Sidney Bedell Award, the WPCAP Ted Moses and Ted Haseltine Awards, and the AAEES Gordon Maskew Fair Award. In 1985, Pennsylvania State University named him Outstanding Engineer Alumnus.

Stanley E. Kappe was an activist member and leader in several national and Chesapeake region professional societies. He served as the Executive Director of the American Academy of Environmental Engineers (now the American Academy of Environmental Engineers and Scientists) from 1971 to 1981.

THE 2016 KAPPE LECTURER

Sudhir Murthy, Ph.D., P.E., BCEE

Innovations Chief, DC Water
Washington, DC

EDUCATION

- B.E., Civil Engineering, RV College of Engineering, India, 1990
- M.S., Environmental Engineering, Virginia Tech, 1992
- Ph.D., Civil Engineering, Virginia Tech, 1998

PROFESSIONAL ASSOCIATIONS

- American Academy of Environmental Engineers and Scientists
- International Water Association (IWA)
- Water Environment Federation (WEF)
- Professional Engineer, Virginia
- Class 1 Wastewater Treatment Plant Operator License, Virginia

Dr. Murthy is the Innovations Chief at DC Water. He leads the development and implementation of the Authority's innovation strategy. Sudhir creates, defines, and translates research and development into new or improved facilities, products, services or revenue concepts. Dr. Murthy led the concept development for several programs at the 391 mgd Blue Plains advanced treatment plant that has led to nearly $1 billion in engineered facilities.

He started his engineering career in consulting at Parsons and later at CH2M, where he was involved in engineering planning studies and process design of wastewater treatment plants, including new approaches for nutrient removal, membrane treatment, anaerobic digestion, and dewatering. In 2002, he was invited to conceive and then lead the research and development program at DC Water to address the needs of a large capital program. Rather than build an internal team of employees, he chose to develop a collaborative open innovation program. Innovation projects are developed through novel approaches of public-public partnership with other water utilities and through collaboration with private enterprise and universities. Most of these research projects are developed through joint research proposals funded through WERF, EPA or NSF with matching funds often provided by the partners. More than 80 MS and PhD students from universities in North America, Europe, Australia, and Africa, and their academic advisors, have been contributing to the planning effort with most of these students being 'insourced' to perform research at DC Water or other partner utilities in a multifunctional and interdisciplinary setting. This approach is now viewed as a model for collaborative engagement by universities and utilities. Similarly, Dr. Murthy is working with private enterprise in developing new approaches for 'co-innovation' between the water technology supply and demand sectors. These collaborative approaches address both the need for scholarship and the need for robust designs for evaluating new and complex technologies and the promotion of free enterprise associated with technology adoption.

In the past few years, DC Water has won four of six Research Grand Prizes from the American Academy of Environmental Engineers and Scientists, several research and technology awards through the National Association of Clean Water Agencies, and the Water Environment Research Foundation Award for Excellence in Innovation. Dr. Murthy has received several Water Environment Federation awards including the Ralph Fuhrman Medal for Academia-Practitioner Collaboration, the George Gascoigne Medal for Wastewater Treatment Operational Improvement, and the Camp Applied Research Award. He is an IWA and WEF Fellow. He serves on the board of directors of IWA.

Dr. Murthy continues to champion the development of internal innovation programs as a means for developing sustainable and resilient water utilities and is the founding co-chair of the joint WEF/WERF utility program called LIFT

– Leaders Innovation Forum for Technology – with nearly 300 participating utilities. This program helps utilities with policies and approaches to drive innovation in the water sector.

Dr. Murthy has contributed to several WEF Manuals of Practice, organized conferences for IWA and WEF, and served on committees (he Chairs the IWA Nutrient Removal and Recovery Specialist Group) for several professional organizations. He has published nearly 100 peer reviewed papers, reports, and manuals, and has published over 300 articles. He has presented at numerous state, national, and international conferences.

Dr. Murthy's lectures will provide valuable examples of converting fundamental engineering and scientific principles into practical large-scale solutions. Students will benefit from understanding both research approaches and constraints for implementing new technologies converted into full scale facilities.

ABSTRACTS OF LECTURES OFFERED

MAXIMIZING PROCESS INTENSIFICATION AND RESOURCE RECOVERY- FROM THEORY TO PRACTICE

In the past 100 years of water reclamation, improvement in treatment to meet new or more stringent permit requirements have used more resources, more land, more energy, and more chemicals. Rapid urbanization is pushing plants to seek out new approaches for better use of these resources as property values increase and there is little room to expand. In the United States, where plant capacity is determined by flow, water conservation is resulting in larger populations and therefore larger loads being served within the same flow. Often, the solids capacity for treatment is met before the liquid capacity. Re-tooling plants to provide adequate intensification has become an important goal. To achieve this intensification within existing infrastructure of concrete tanks built to last for 50-100 years provides additional challenges. Examples will be provided of new approaches for intensification that use or augment existing infrastructure in new ways. Understanding and addressing process limitations have been key in bringing about this intensification. Examples will be provided of opportunities for intensification of greater than 200% (while simultaneously reducing or maintaining the resources used) for nearly every major part of the wastewater treatment plant including preliminary/primary treatment, secondary treatment, nutrient removal, anaerobic digestion, and dewatering.

There is also a global interest in developing new approaches for resource recovery in wastewater. The Water Environment Federation has led the renaming of wastewater treatment plants (WWTP) to water resource recovery facilities (WRRF). The name change reflects a change in the mindset within the water sector, focusing on resource recovery as an essential element of treatment. DC Water has embarked on a journey of maximizing resource recovered from used water by maximizing carbon redirection, intensifying anaerobic digestion with thermal hydrolysis, developing value products, heat and electrical energy.

This presentation will describe the continuing research journey for developing an intensification and resource recovery program within existing infrastructure at a large regional facility in Washington, DC, with little room to expand while meeting new stringent nutrient permits and managing combined sewer flows. The long-term sustainability of built infrastructure is dependent on the intensification that these approaches represent.

NEW APPROACHES FOR NITROGEN REMOVAL

Water resources recovery facilities have extensively used energy and carbon within aerobic treatment processes that are dependent on the addition of oxygen for the oxidation of polluting carbon and nitrogen. One hundred years after the development of the activated sludge process, energy efficient anaerobic treatment processes (treatment in the absence of oxygen) are gaining prominence outside of tropical regions. This opportunity is availed through the use of the anammox microorganism. The anammox bacteria uses different metabolic pathways than the traditional bacteria used for nitrogen removal in wastewater treatment. These organisms can remove nitrogen from wastewater under anaerobic conditions and in the absence of organic carbon and uses two-thirds less energy. Thus, nitrogen removal and energy autarky (achieving self sufficiency for energy requirements) can now be two concomitant objectives for water resources recovery facilities. Conventional biological nitrogen removal processes use energy intensive aeration, internal or external carbon for denitrification, and alkalinity chemicals. In comparison, short-cut nitrogen removal processes provide potential benefits for energy, carbon, and chemical savings. Shortcut nitrogen removal is a form of biological nitrogen removal that proceeds with partial and/or incomplete oxidation of ammonia, stopping at nitrite instead of nitrate, to 'shortcut' the conventional nitrification/denitrification process. Shortcut nitrogen removal includes the nitrite-shunt process, which relies on partial nitritification and heterotrophic denitritation, as well as fully autotrophic partial and incomplete nitrification and anaerobic ammonium oxidation, or the deammonification process.

Shortcut nitrogen removal has successfully been applied in sidestream treatment but not as successfully in mainstream processes. Warm sidestream filtrate/centrate from anaerobic digestion contains high ammonia concentrations and insufficient alkalinity for full nitrification and provides an environment for suppressing nitrite-oxidizing bacteria (NOB). There is now a greater interest in developing shortcut approaches for the more dilute and colder mainstream processes. NOB out-selection in mainstream is a major emphasis in recently studied laboratory, pilot, and some full-scale systems.

This presentation will discuss the state of knowledge of shortcut nitrogen removal for sidestream and mainstream nitrogen removal. In this evolving research domain, three main approaches for mainstream short-cut nitrogen removal are considered: (i) granular approach, (ii) attached growth approach, and (iii) suspended/hybrid approach. There are many common elements in these different approaches that are a foundation for full-scale implementation.

THE AAEES 60TH ANNIVERSARY 1955 - 2015

The American Academy of Environmental Engineers and Scientists celebrated it's 60th Anniversary.

AAEES was officially incorporated under the laws of the State of Delaware on October 21, 1955, as the American Academy of Environmental Engineers (AAEE). The principal purpose of AAEE was to serve the public by improving the practice, elevating the standards, and advancing the public recognition of environmental engineering through a program of specialty certification of qualified engineers. These qualified environmental engineers were known as Diplomates (DEE).

Over the past 60 years, AAEE has grown.

On January 1, 2013, AAEE officially became the American Academy of Environmental Engineers and Scientists (AAEES).

Diplomates are now known as Board Certified Environmental Engineers. The Specialty Certification Program was expanded to include Board Certified Environmental Engineering Members and Board Certified Environmental Scientists. Membership programs were also created for Student Members and Young Professionals who are on the path to Board Certification.

The mission of the Academy has evolved as well. The purpose of AAEES is to protect the public health and the environment by recognizing leadership and excellence through Board Certification of Environmental Engineers and Scientists and to provide professional development opportunities for students, engineers, and scientists.

The 60th Anniversary was celebrated in Los Angeles on October 22, 2015, in conjunction with our Annual Installation Dinner.

2016 AAEES President Howard B. LaFever making his inaugural remarks

Cecil Lue-Hing and Sammi Olmo

2011 AAEES President Brian P. Flynn

Current and past AAEES leadership were on hand to celebrate the Academy's 60th Anniversary

Trustee-at-Large David Vaccari and 2016 Vice President C. Hunter Nolen

2014 AAEES President Christian Davies-Venn and James Patterson

James Mihelcic speaking with Jeanette Brown and Cecil Lue-Hing

Executive Director Burk Kalweit and Michael Selna

David Vacarri and Brian Flynn

Merlyn Hough and Michael Kavanaugh

Christian Davies-Venn inducts the 2016 Officers and Trustees

2010 President Cecil Lue-Hing

Michael Selna and Hunter Nolen

Michael Kavanaugh and William "Bill" Dee

Howard LaFever and Sammi Olmo

2012 AAEES President, Michael Selna

Howard LaFever, Christian Davies-Venn, and Hunter Nolen

Two AAEES Past Presidents, Cecil Lue-Hing and Jeanette Brown

Brian Flynn and Burk Kalweit

APHA Trustee Fred Ellerbusch and Trustee-at-Large David Vacarri

2014 and 2015 AAEES Presidents, Christian Davies-Venn and James F. Stahl

2004 AAEES President and current WEF Trustee, Jeanette Brown

AIChE Trustee Benson Pair, APHA Trustee Fred Ellerbusch, and past presidents Michael Selna and Brian Flynn

James Stahl present a Certificate of Appreciation to Dan Wittliff for his service as NSPE Trustee

2015 AAEES President, James F. Stahl, makes his outgoing remarks

Cecil Lue-Hing and C. Hunter Nolen

James Patterson, James Mihelcic, Cecil Lue-Hing, and Jeanette Brown

James F. Stahl presenting James Mihelcic a Certification of Appreciation for his service as AEESP Trustee

Attendees look on

2008 Past President, William "Bill" Dee

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The American Academy of Environmental Engineers and Scientists can help move along your candidate search. By posting a job on the **AAEES Career Center** at **careers.aaees.org**, you will get unparalleled exposure within the engineering and scientific communities. As a part of the Engineering & Science Career Network, AAEES ensures that your job posting will be seen by thousands of qualified candidates relevant to your industry. And with access to all resumes posted to the network, you can widen your reach to find the right candidate today!

When it comes to making career connections in the **Environmental Engineering** and **Environmental Science** industries, more and more job seekers are turning to the AAEES Career Center to find their next position. Where better to post a job and search for qualified candidates? Visit the AAEES Career Center to post your Environmental Engineering and Environmental Science jobs today!

The ESCN is a strategic industry alliance formed by AAEES and other top trade and professional associations that serve companies searching for engineering and science professionals.

AMERICAN ACADEMY OF ENVIRONMENTAL ENGINEERS & SCIENTISTS®

careers.aaees.org

ENGINEERING & SCIENCE CAREER NETWORK

AAEES PATRONS PROGRAM

The American Academy of Environmental Engineers and Scientists (AAEES – aaees.org) has been in existence for 60 years, credentialing professionals in environmental engineering and science, educating the public about the value of environmental systems, working with ABET (the Accreditation Board for Engineering and Technology) as the Lead Society in the accreditation of over 60 college and university Environmental Engineering programs, and providing recognition for noteworthy projects and programs in the annual Excellence in Environmental Engineering and Science competition.

The Academy has greatly benefited from the collaborative spirit and active participation of its sponsoring societies. However, from the standpoint of economic support, the Academy's endeavors have focused on individual membership and the actions of these individuals in implementing its goals. To sustain the Academy's programs and enhance their effectiveness, the Academy is implementing a Patrons Program that is being offered in three categories:

- Corporate/Consulting firms,
- Public Agency/Government organizations, and
- Academic institutions.

It is the Academy's firm belief that the synergistic impact of individual membership activities, coupled to support by the organizations in which they work, will create a powerful success model that will enable the Academy to better implement its organizational goals and mission.

The Patrons Program umbrella is expansive. Its intent is to have our patrons effectively co-brand with the Academy for everything that it does in outreach to either members or the general public.

The list below is a summary of the Patrons Program elements that participants receive.

- Featured recognition of Patrons on the AAEES website with a direct link to the Patron's website. We will establish a rotating schedule of all Patrons' content that features a noteworthy event or project undertaken within their overall portfolio. AAEES staff will work with Patrons' staff to structure their content and format. This aspect of the program benefits both the Patron and the Academy in publicizing the profession, its relevance, and its accomplishments.
- Oral and visual recognition (signage/logo) for Patrons at all AAEES events.
- Prominent recognition/logo display in *Who's Who in Environmental Engineering and Science*.
- Prominent recognition/logo display in the Environmental Engineering and Science Resource Guidebook.
- A listing in the *Environmental Engineering and Science Resource Guidebook*, featuring the Patron organization's Board Certified staff and its overall capabilities, at no-charge.
- Two complimentary tickets to the annual Excellence in Environmental Engineering and Science Awards Conference and Luncheon (E3S) in Washington, DC, on April 14, 2016.
- Two complimentary entries for the E3S competition.
- Waiver of certification application and examination fees for a Patron's employees.
- Prominent publication space/logo recognition in the *Environmental Engineer and Scientist* quarterly magazine.

The Patrons Program is much more effective in providing consistent recognition for our Patrons. Wherever the Academy goes and wherever Academy materials appear, those of its Patrons also appear.

In establishing the Patrons Program the Academy acknowledges and appreciates the past economic support of corporate, agency, and academic entities. Their support for individual events and programs has been beneficial to the Academy. We believe that the Patrons Program outlined here will be more effective in achieving the goals of the Academy in developing its programs, and more effective in providing the recognition that our Patrons seek for their sponsorship of the Academy.

Administratively, the Patrons Program enables Patrons to support the full slate of Academy activities through one annual contribution. We are setting annual Patron contribution commitments of: $8,000 for Corporate/Consulting category; $6,000 for Public Agency/Government category; and $2,000 for Academic institutions participating in the program.

We invite you to consider having your organization become an Academy Patron. Your decision to participate will trigger our sending you a simple 'Patrons Program Participation Agreement' that lists the program features and benefits. This will be followed by contact from the Academy staff to determine your preferred invoicing and form of payment information. We will also need to have Patrons' staff contact information to ensure that we have requisite materials -- accurate logos, entity identification, website links, and other items -- to enable us to create the content we will use to maximize your exposure and recognition as an Academy Patron.

Should you have questions please contact: Burk Kalweit, AAEES Executive Director (BKalweit@aaees.org).

AAEES PATRONS

Public Agencies
Sanitation Districts of Los Angeles County
City of Los Angeles Bureau of Sanitation
Los Angeles Department of Water and Power
Orange County Water District
Orange County Sanitation District
West Basin Municipal Water District

Consulting Firms
AMEC Foster Wheeler
Carollo Engineers
CDM Smith
CH2M
Geosyntec
MWH

AAEES *Patrons*

SINCE 1933

Converting Waste Into Resources

Excellence in Environmental Engineering and Science
Awards Luncheon and Technical Conference

April 14, 2016
National Press Club
Washington, DC

Presenting the

Excellence in Environmental Engineering and Science Award Winners

Environmental Communication Award Winner

The Technical Conference

Recognizing

Stanley E. Kappe Award

Cecil Lue Hing

Edward J. Cleary Award

Kira Lynch

Gordon Maskew Fair Award

Bruce E. Rittmann

International Honorary Member Award

Ruey-An Doong

Honorary Members

Kenneth Kirk

Regina "Gina" McCarthy

Additional awards include the Excellence in Environmental Engineering Education Award, W. Brewster Snow Award, W. Wesley Eckenfelder Graduate Research Award, and the Innovyze Excellence in Computational Hydraulics and Hydrology.

For tickets and information, call AAEES at 410.266.3311 or visit our website at http://www.aaees.org.

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